

Anatomy of Japanese conifers.—The difficulty in distinguishing the wood of closely related conifers by their anatomical structure is clearly illustrated by FUJIOKA's detailed study⁷ of the anatomy of 37 species of Japanese Coniferales. The primary object of the investigation, as outlined in the preface, was to secure a more reliable basis for distinguishing the various Japanese woods of similar external appearance. In the "Tabelle zum Bestimmen" which summarizes the results of the investigation, the 19 genera investigated are separated into 16 groups. Evidently no simple and reliable basis for distinguishing species was discovered, nor were the following genera separated: *Taxus* and *Torreya*; *Thuyopsis*, *Cryptomeria*, *Chamaecyparis*, and *Cunninghamia*. The diagnostic characters used in the classification are those used by GOTHAN⁸ in his key to the wood of the gymnosperms and are therefore subject to similar criticisms.

The use of traumatic resin canals as a basis for separating the Abietae (*Abies* and *Tsuga*) from other conifers is unreliable, since any given specimen submitted for identification may be uninjured and therefore may not possess these structures. As the reviewer has pointed out,⁹ tertiary thickenings are not invariably a reliable diagnostic character in separating the wood of *Larix*, *Pseudotsuga*, and *Picea*. Similarly, variations in ray parenchyma pitting are of doubtful value in distinguishing the wood of the various genera of the Cupressineae. That the cupressineous type of ray pitting is a reduction from the abietineous type ("Abietineen Tüpfelung") is clearly shown by the persistence of the latter in the Taxodineae and Cupressineae in regions of phylogenetic significance, for example, cone axis, injured wood, young root, etc. As is commonly the case with structures undergoing reduction, the ray pitting is extremely variable in a given species or genus of the Cupressineae, just as is the occurrence of marginal tracheids and the recurrence of resin canals in the wood of the Abietae and *Sequoia*.

The study of many gymnosperms and angiosperms emphasizes the fact that although internal structures are invaluable in blocking out the general outlines of a natural classification of plants, they are too conservative to be significant in distinguishing closely allied species and genera.—IRVING W. BAILEY.

Cecidology.—Among the European contributions is a paper by SCHELLENBERG¹⁰ in which the author claims that galls caused by fungi serve for storage for

⁷ FUJIOKA, M., Studien über den anatomischen Bau des Holzes japanischen Nadelbäume. Jour. Coll. Agric. 4:201-236. pls. 18-24. 1913.

⁸ GOTHAN, W., Zur Anatomie lebender und fossiler Gymnospermen-Hölzer. Abh. Preuss. Geol. Landesanstalt. Berlin. 1905.

⁹ BAILEY, I. W., The structure of the wood in the Pineae. BOT. GAZ. 48:47-55. pl. 5. 1909.

¹⁰ SCHELLENBERG, H. C., Über Speicherung von Reservestoffen in Pilzgallen. Verhandl. Schweiz. Naturl. Gesells. 94:277-279. 1911.